National Park Service
Inventory and Monitoring Program

Eastern Rivers and Mountains Network

Blair Gap Run at ALPO. Photo C. Tzilkowski.

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Monitoring Protocol Development Underway

It has been six months since our last newsletter, a busy time ushering in multiple inventory and vegetation mapping projects, keeping tabs on national I&M initiatives and guidance, moving offices, creating a network brochure, and, most importantly, developing projects for our priority vital signs. Having identified and agreed upon the priority vital signs for the ERMN, we now enter a multi-year period of research and development to ensure that our ecological monitoring is state of the science. To this end, we're in the process of adding a few new faces to network. In addition to our new protocol authors (Page 2), Dr. Penelope Pooler, an ecological statistician at Virginia Tech, is working with us and the Northeast Coastal and Barrier Network to ensure statistically sound and defensible sampling designs. The ERMN is also working with Penn State to hire a term ecological database designer to assist Nathan with the important and challenging task of organizing, securing and disseminating future data. Finally, Jennifer Stingelin Keefer is expanding her role within the network. Jennifer continues to manage our (and Mid-Atlantic Network's) NPSpecies databases but is also taking the lead on the Invasive Species – Early Detection Protocol and field testing the national Ozone Foliar Injury Protocol at ALPO.

This is an important time for the network and, for me personally, the most exciting so far. It has been and continues to be a pleasure to work with such a great team of scientists and park personnel to put this program together.

Please don't hesitate to contact me at anytime,
Matt

Status of ERMN Protocol Development

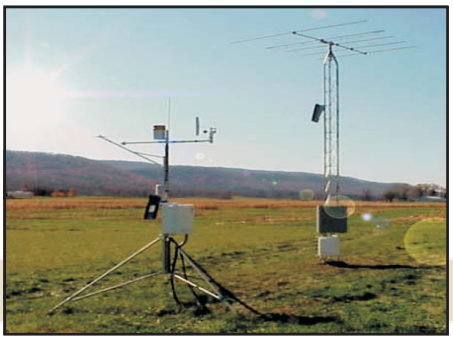
Air Quality

NPS Air Resource Division continues to develop a report template and scorecard (by network) illustrating air resource condition and trend. While only wet and dry deposition were identified as priority vital signs for the ERMN, these reports will cover trends in atmospheric ozone, mercury deposition, visibility, and particulate matter as well.

A picture of common milkweed (Asclepias syrica) with ozone damage at ALPO. Photo D. Davis.

Weather and *Climate*

The network continues to work with Dr. Paul Knight, PA State Climatologist, to complete an inventory of weather stations and make data from relevant stations accessible to the network and network parks via a web interface. This endeavor is rolling seamlessly into the development of a weather and climate monitoring protocol.



A weather station similar to those around each park. Photo courtesy of NRCS.

Forest, *Woodland*, *Shrubland* and *Riparian Vegetation*

Dr. Jim Finley, Penn State University, continues to develop our vegetation monitoring protocol. Jim and grad student, Andy Filipczak, have been reviewing existing programs and developing monitoring questions and objectives for review and input from NPS in the near future. Jim plans to hire a post-doc this fall to work with Andy to draft the protocol over the winter. Pending review, summer 2007 is targeted for pilot data collection and initial testing of the protocol.

Northern red oak - mixed hardwood forest at FONE. Photo E. Zimmerman.

Invasive Species - *Status* and *Trends*

This vital sign is broad including plants, animals, diseases and pathogens. Initial development of this vital sign is associated with the vegetation monitoring protocol where a specific objective is to document how the number, composition, and proportion of non-native plant species is changing.

Japanese stiltgrass (Microstegium vimineum) at FRHI. Photo E. Zimmerman.

Soil Function and *Dynamics*

This vital sign is associated with the vegetation monitoring protocol and is currently on-hold within our network while the Northeast Temperate Network continues to research and develop this concept. We're primarily interested in how soil chemistry is changing over time as it relates to deposition (acidic and nutrients).

Photo courtesy of NPS.

Early Detection/Surveillance Monitoring of Invasive Species

Jennifer Stinglin Keefer, Botanist and Penn State research associate (and long-time NPSpecies guru), is taking the lead on this protocol for the ERMN. Protocol development will start initially with early detection of invasive plant species. Protocol objectives and a protocol development summary will be out for initial review this fall. Pending review, summer 2007 is targeted for initial testing of the protocol.

Autumn olive (dark bluish green color) invades a former crop field in DEWA. Aerial photo courtesy of B. Agne.

Water Quality and Quantity

The network launched a cooperative project with Dr. Pete Murdoch, USGS, to develop the ERMN surface water hydrology and water quality protocol. Pete has worked extensively in the Delaware River basin and is currently involved with a detailed water quality project with UPDE. This project is just underway with a recently completed start-up trip to NERI, GARI and BLUE.

Bluestone River. Photo S. Welsh.

Aquatic Macroinvertebrates

The network plans to initiate protocol development for this vital sign early in FY07. This approach will allow the water quality protocol development to get underway allowing integration among these two protocols in the future. In the meantime, Dr. Caleb Tzilkowski will be summarizing relevant aquatic macroinvertebrate monitoring programs in and around ERMN parks.

Hendrickson Mayfly (Ephemerella subvaria). Photo C. Tzilkowski.

Louisiana Waterthrush

The network initiated a cooperative project with Drs. Brady Mattson and Bob Cooper, University of Georgia, to develop the ERMN waterthrush protocol. Brady recently completed his dissertation using Louisiana Waterthrush as an indicator of stream and watershed condition in the Georgia piedmont. They will start work on this project this fall with a "Louisiana Waterthrush Summit" to develop specific objectives scheduled for just after the new year.

Photo T. Master

Landscape Dynamics

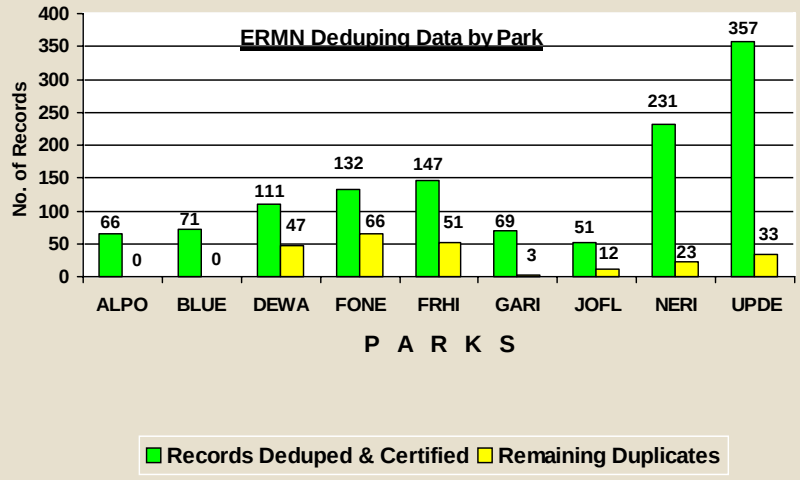
This vital sign is broad in scope covering both natural and social phenomenon. Many of the results of this protocol will eventually be examined in conjunction with most of the other protocols. The ERMN has developed a project with Dr. Cindy Brewer, Penn State University, to build on work she's already done for the NPS Social Science program developing and mapping socio-economic indicators for parks and their surrounding regions. This project will include development of an easily repeatable template for ERMN use in the future as well as a pilot study of DEWA in 2007.

Photo courtesy NPS.

NatureBib Update

After many long hours of deduping the ERMN databases, a final "clean" and certified collection of park databases appears to be on the horizon. Scheduled for final deduping by the end of August 2006, the resulting records and databases will de then be declared certified and complete. To date, 1235 records have been deduped, with ALPO and BLUE complete.

As of August 2006, I will begin moving into the next phase of NatureBib-related work: the scanning and digitization of important ERMN documents. There will be a conference call arranged by the network in the near future to discuss the prioritization and logistics of scanning and digitizing ERMN NatureBib documents.



If you have any further comments, questions, or suggestions regarding NatureBib and/or the scanning and digitizing of documents please feel free to contact me at (814) 863-1904 or at sdt3@psu.edu.
Thanks, Scott Tiffney.

NatureBib is Online at:
http://www.nature.nps.gov/nrbib/

NPSpecies Certification

For the first half of 2006, the following NPSpecies certifications were completed with the assistance of the multi-talented taxa expert, Brad Ross. Brad certified amphibians and reptiles for ALPO, JOFL, FONE, FRHI, and UPDE as well as mammals for ALPO and JOFL. Certification will continue as new inventory data are collected and submitted.

What's new?

Most of you know me solely as the ERMN NPSpecies Data Manager, but recently I was promoted to the position of Botanist/Research Associate. My educational background consists of a B.S. in Wildlife and Fisheries Science, a minor in Forest Science, a teaching certification in Agricultural and Environmental Science, and an M.S. in Forest Resources with an emphasis on invasive species control. In addition to my ERMN and Mid-Atlantic Network (MIDN) NPSpecies duties, I am developing an Invasive Species Early Detection Protocol for the ERMN network as well as field testing the "Handbook for Assessment of Foliar Ozone Injury on Vegetation in the National Parks" at ALPO.

If you have any questions about NPSpecies, please contact me at: 814-865-8497 or at jls227@psu.edu (Photo on right of the ozone indicator species common milkweed at ALPO).
Thanks, Jennifer.

NPSpecies website:
http://science.nature.nps.gov/im/apps/npspp/

Calendar

July

- Matt traveled to NERI with team led by Dr. Pete Murdoch to discuss development of water quality and quantity protocol.
- Jennifer traveled to several MIDN parks for NPSpecies training.
- Nate and Ed continued to develop a trails layer for ALPO and JOFL.

August

- Matt and Beth Johnson travel to NERI to tour and discuss ecology of riparian plant communities with plant ecologists Greg Podniesinski, Stephanie Perles, and Jim Vanderhorst.
- Nate and Ed continue to develop a trails layer for FONE and FRHI.
- Jennifer conducts ozone foliar injury assessments at ALPO with Dr. Bob Kohut of Cornell University.
- Jennifer travels to FONE for NPSpecies training.

September

- Matt travels to ALPO, JOFL, FONE and FRHI with team led by Dr. Pete Murdoch.
- Environmental Database Designer scheduled to begin.

October

- Network completes FY06 Annual Administrative Report and drafts FY07 Work Plan.

November

- Protocol Development Summaries (PDS) due from protocol authors.

December

- Draft Phase 3 Report Due to National I&M Program Leaders.
- FY07 Workplan assembled for ERMN Board of Directors.

We've Moved !!

In March of 2006, the entire NPS staff moved to the new facilities of the School of Forest Resources. Although our phone numbers are the same, our address has changed:

422 Forest Resources Bldg.
University Park, PA 16802

Jennifer's office is 425.
Scott's office is 412.

Thanks !!

Thanks to Ed Petronsky, a Penn State Undergraduate in Geograpy. Ed worked for the ERMN this summer on a variety of GIS and cartographic projects, including creating a trails layer for ALPO, JOFL, FRHI and FONE.

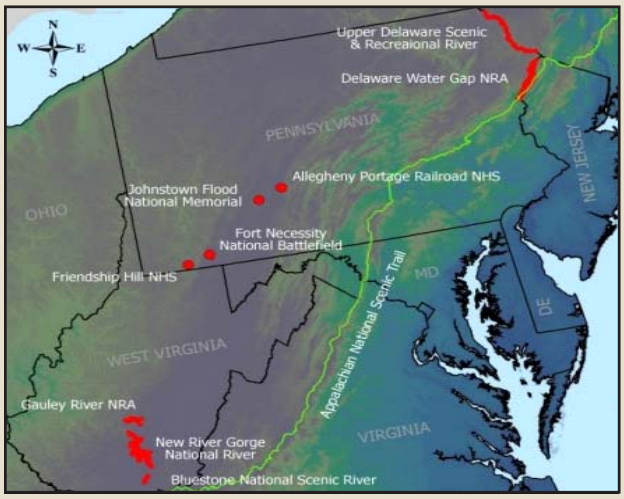
Parks of the Eastern Rivers and Mountains Network

Johnstown Flood National Memorial (JOFL)
Size(2004): 164 acres
Annual visitors(2004): 112,353

Friendship Hill National Historic Site (FRHI)
Size(2004): 675 acres
Annual visitors(2004): 29,891

Gauley River National Recreation Area (GARI)
Size (2003): 11,507 acres
Annual visitors(2003): 152,706

New River Gorge National River (NERI)
Size(2004): 72,189 acres
Annual visitors(2004): 1,152,073



Bluestone National Scenic River (BLUE)
Size(2003): 4310 acres
Annual visitors(2003): 50,384

Upper Delware Scenic and Recreational River (UPDE)
Size(2004): 55,575 acres
*Annual visitors(2004):*224,392

Delaware Water Gap National Recreation Area (DEWA)
Size (2004): 68,714 acres
*Annual visitors(2004):*5,052,062

Allegheny Portage Railroad National Historic Site (ALPO)
Size(2004): 1,296 acres
Annual visitors(2004): 124,267

Fort Necessity National Battlefield (FONE)
Size(2004): 903 acres
*Annual visitors(2004):*105,366

Eastern Rivers and *Mountains* Network

Inventory and Monitoring Program
National Park Service

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Jennifer Stingelin Keefer, *Botanist/Research Associate*
(Penn State Cooperators)

Websites:
ERMN - http://www1.nature.nps.gov/im/units/ermn/
National I&M -http://science.nature.nps.gov/im/